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Applicants: Gregory W. Cox et al.
Filed: November 28, 2001
For: Method and Apparatus for
Self-Link Assessing Router
TC/A.U.: 2664
Examiner: Justin M. Philpott

Confirmation No. 1240

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this date.

Docket No.: CML00090N (69611)
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Date

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APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
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Pursuant to 37 C.F.R. §1.192, the applicants hereby respectfully submit the following Brief in support of their appeal. Pursuant to 37 C.F.R. §1.192(a) this brief is being filed in triplicate.

(1) Real Party in Interest

The real party in interest is Motorola, Inc., a Delaware corporation having a primary place of business in Schaumburg, Illinois.

(2) Related Appeals and Interferences

There are no related appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

Claims 1-15 are pending and presently stand twice and finally rejected and constitute the subject matter of this appeal.

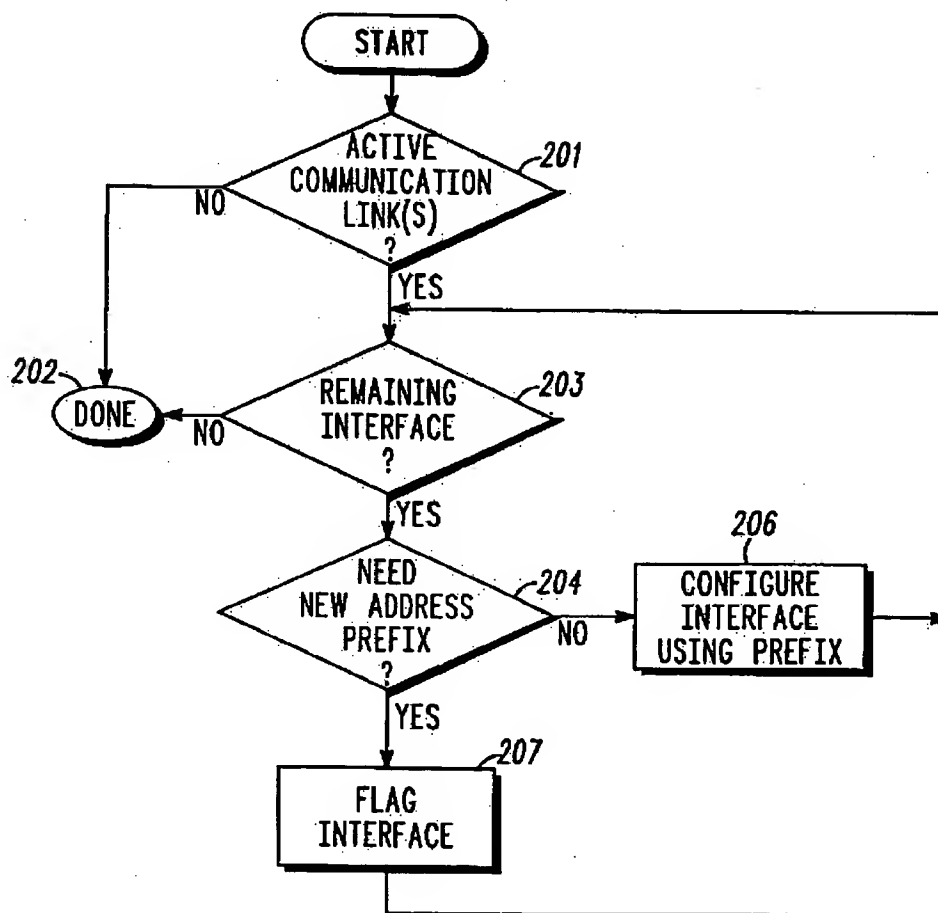
(4) Status of Amendments

There are no unentered amendments.

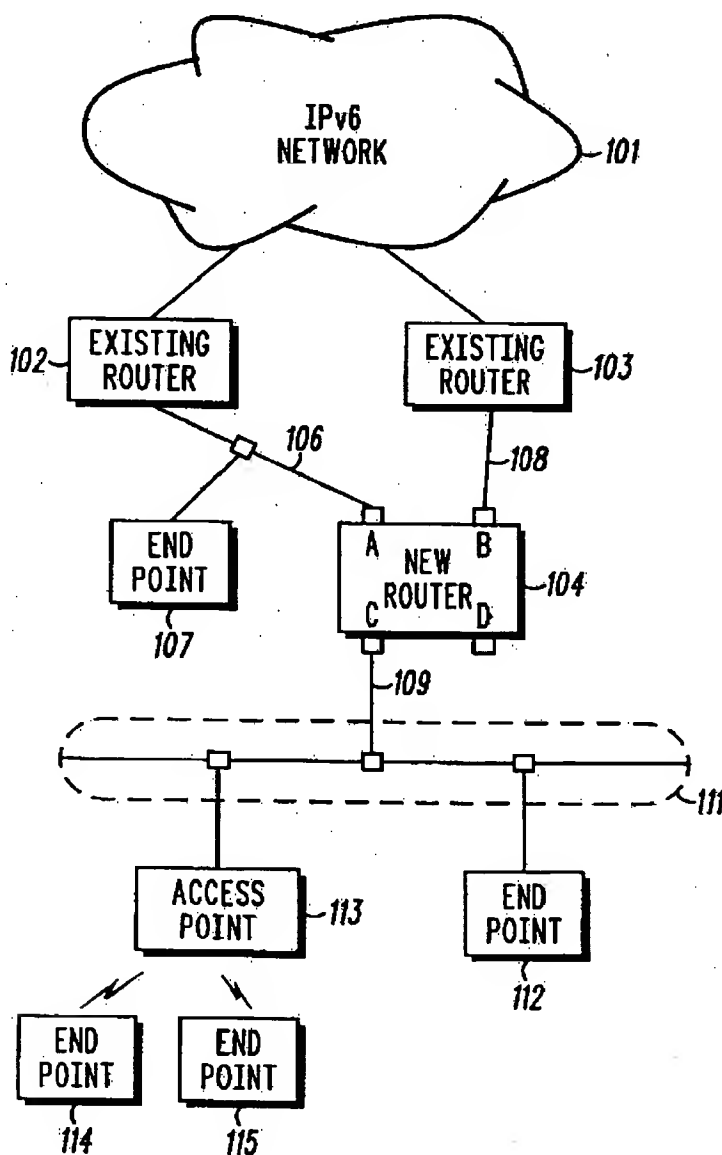
(5) Summary of Invention

Internet Protocol version 6 (Ipv6) comprises a protocol intended, in part, to better accommodate wireless endpoints [page 1, lines 19 – 21]. Though this protocol family provides for endpoints that are anticipated to be self-configuring [page 2, lines 2 – 3], routers are excluded from assistance in this regard [page 2, lines 3 – 11]. The present invention addresses this shortcoming.

FIG. 2 is presented below for the convenience of the reader.



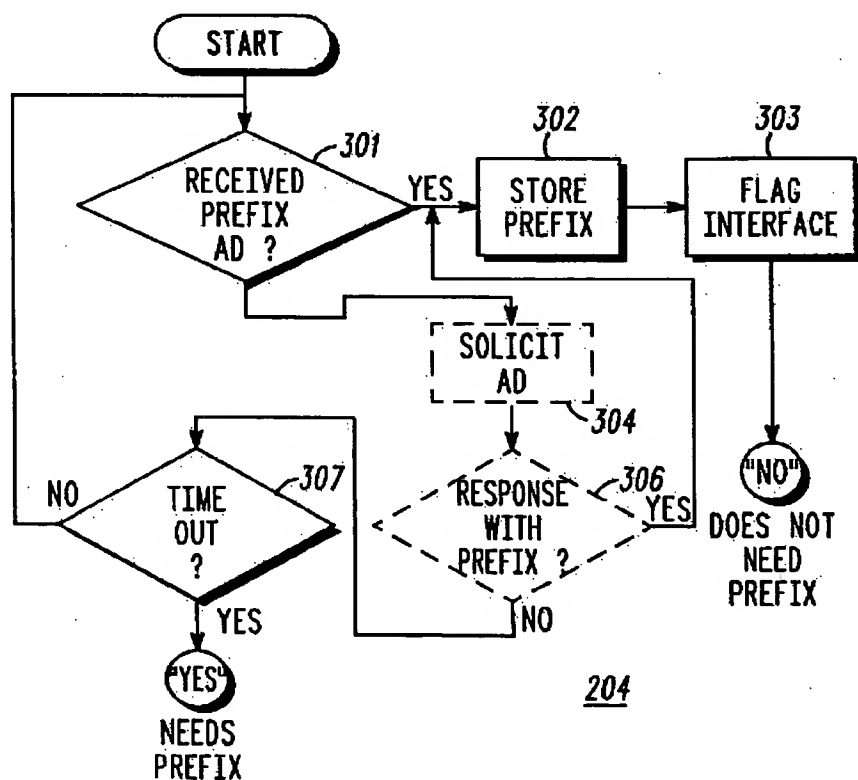
A router (104) can monitor (201) its interfaces (such as interfaces A through D in FIG. 1 reproduced below for the convenience of the reader) to identify active communication links [page 4, lines 17 – 23].



When no interface is connected to an active communication link, this automated process concludes (202). Upon detecting (201) active communication links, however, this automated process then determines (203) whether any interfaces remain that have not yet been assessed. When all active interfaces have been assessed, the process, again, can conclude (202).

When an unassessed interface exists, the process ascertainment (204) whether a particular interface (and hence the active communication link to which that interface connects) needs a new address prefix (a new address prefix comprising, for example, an address prefix that has not already been allocated for use by this communication link and/or by this router). When this router already has an address prefix that can be utilized to support the communication link that couples to the interface being processed, then a new address prefix is not required and the router can automatically configure (206) an Ipv6 address for the interface based on a pre-existing and available address prefix, and then optionally begin advertising this prefix on the link. When the process determines (204), however, that a new address prefix is required for the interface, the process flags (207) that interface (for example, by making an appropriate entry into resident memory of the router) or takes other appropriate action to denote for later recollection and action that this particular interface needs a new address prefix [page 4, line 32 – page 5, line 15].

FIG. 3 is now presented for the convenience of the reader.



To determine whether a new address prefix is needed, a router can monitor data traffic on the active communication link for the interface being studied [page 5, lines 24 – 27]. In particular, the router can look (301) for a received address prefix advertisement (prior art routers often advertise their address prefixes on their supported links to facilitate stateless autoconfiguration by endpoints). Upon receiving an address prefix advertisement, the prefix can be stored (302) and the corresponding interface flagged (303) accordingly. Such actions are one approach to render the configuration step (206) described earlier [page 5, line 27 – page 6, line 4].

When an address prefix advertisement from another router cannot be detected (301), the router can transmit a solicitation for such an advertisement to the link that couples to the interface being processed. Such messages are permitted by endpoints and should elicit a corresponding network address prefix advertisement from any other configured router on that link. Upon detecting (306) such a response, the address prefix portion of that response can be stored (302) and later utilized to autoconfigure (206) that particular interface as noted earlier.

When no such response is detected (306) (or when dispensing with this activity) the router can determine (307) whether sufficient time has been expended on this particular interface. If not, the process can repeat. Otherwise, the process continues as related above with respect to FIG. 2 by flagging the interface as requiring a new address prefix [page 6, line 5 – 18].

So configured, a router can automatically self-assess its communication link interfaces and the results can be used to self-configure interfaces with address prefixes where appropriate and available and to otherwise identify interfaces that require a new address prefix. The latter information can be utilized to facilitate subsequent actions to obtain the needed new address prefix. The automated nature of this self assessment mechanism can significantly relieve many of the logistic difficulties of bringing a new router online, particularly when interfacing IPv6 links with existing IPv6 networks [page 6, lines 19 – 27].

(6) The Issues

Claims 1 through 15 stand rejected under 35 U.S.C. 103(a) given a single reference by Narten et al. Entitled “Neighbor Discovery for IP Version 6 (IPv6)” (hereinafter referred to as

“Narten”) in view of additional observations and motivations as supplied by the Examiner. The applicant disputes this rejection.

(7) Grouping of the Claims

Group 1 – claims 1 through 4 and 7 through 15.

Group 2 – claims 5 and 6.

(8) Arguments

Group 1

The Examiner argues that Narten discloses the subject matter of claims 1 through 4, and 7 through 15 with the exception of “automatic” processing as stipulated by those claims. The Examiner has then sought to supplant this deficiency with observations such as these from the first Office Action:

[I]t is known in the art to adapt an existing method to be automatic. Replacing a method that is performed manually with the same method performed automatically would provide obvious significant benefits, such as significant increased speed, reduced cost, and predictable and accurate performance, which would be obvious to one of ordinary skill in the art. That is, at the time of the invention it would have been obvious to one of ordinary skill in the art to adapt the known method of identifying whether a router needs new address prefixes for active links to be performed automatically, in order to provide obvious significant benefits such as significant increased speed, reduced cost, and predictable and accurate performance.

[Page 3 of Office Action dated February 13, 2003.]

The Narten reference upon which the Examiner primarily bases this rejection is devoid of any such teaching or suggestion. As noted by the present applicant in the Background section of the present patent application, other IPv6 materials are also similarly silent on this point. The only references of record, therefore, provide no support for the Examiner’s statements noted above regarding automation.

It is therefore clear that the Examiner is basing this rejection upon facts that are within the personal knowledge of the Examiner himself. For example, the Examiner makes

statements regarding “reduced cost,” “increased speed,” and “predictable and accurate performance” that are asserted as being necessary corollaries to automation and that constitute the existing motivation to those of ordinary skill in the art. The Examiner provides no factual basis for such statements, however, either in general or, more appropriately, with respect to this particular art (in fact, there are many circumstances where those skilled in the art eschew automation in favor of non-automated practices).

When such an event occurs during the course of examination, the Code of Federal Regulations makes explicit provision for a mechanism to permit an applicant to bring the facts that the Examiner is relying upon fully into the open to thereby permit a review of such facts including their full and relevant scope, their context of application (including any conditions and direction that relate to their usage), their time of initial relevancy (to permit, for example, submission of an affidavit when appropriate to swear behind the representation), and so forth. In particular, 37 C.F.R. 1.104(d)(2) reads as follows:

When a rejection in an application is based on facts within the personal knowledge of an employee of the Office, the data shall be as specific as possible, and the reference must be supported, when called for by the applicant, by the affidavit of such employee, and such affidavit shall be subject to contradiction or explanation by the affidavits of the applicant and other persons. [Emphasis provided.]

Pursuant to a response to the first Office Action, the applicant specifically requested such an affidavit of the Examiner. Such an affidavit will serve to place the facts that the Examiner is relying upon squarely on the record to thereby afford the applicant an opportunity to better understand the full content and context of those facts and to also permit the applicant an opportunity to respond as appropriate. Upon having made this request, Rule 104 is unequivocal – the Examiner “must” support his factual assertions with a corresponding affidavit.

The Examiner, however, has refused to comply with this regulatory requirement. No such affidavit has been placed on the record. Instead the Examiner seeks to only continue to rely upon an unsupported reiteration of the same facts as were set forth in the previous Office

Action.¹ Consequently, having developed a record that demonstrates only a part of what the applicant presents as claimed subject matter, the Examiner has failed to make a *prima facie* showing of obviousness.

The applicant therefore respectfully submits that the claims of Group 1 may be passed to allowance.

Group 2

Claims 5 and 6 are ultimately dependent upon claim 1 which claim was shown to be allowable above. In addition, these claims were also rejected under 35 U.S.C. 103(a) given Narten in view of the Examiner's purported personal knowledge; to that extent, the comments set forth above with respect to Group 1 claims are applicable here as well. For the sake of brevity, however, those comments will not be repeated.

Claim 5 further specifies that the recitation of Claim 1, wherein the router automatically determines whether the router needs a new address prefix, further includes automatically determining when the router has not received a prefix advertisement from another router for the same active communication link. The Examiner argues that Narten discloses determining when a router has not received a prefix advertisement from another router for the same communication link. Assuming, for the sake of argument, the veracity of the Examiner's observation, Narten would still fail to disclose such a concept in the context of determining whether the router needs a new address prefix. An obviousness rejection is not properly made upon merely noting a disjointed collection of elements that happen to match the

1. It should be noted that the Examiner does appear to seek to justify his factual conclusions by relying upon two case citations. This reliance is utterly misplaced in both instances. A first case, *In re Venner*, 120 U.S.P.Q. 192 (C.C.P.A. 1958) provides some discussion regarding automation and inventiveness, but fails to provide useful guidance here for at least two reasons: (1) *Venner* provides a holding that reflects a specific factual context; it's applicability to the present claims is impossible to judge because, again, the Examiner has not placed the facts upon which he relies fully upon the record; and (2) *Venner* well predates *Graham v. John Deere* which, as is well known, clearly sets forth the process and standard by which novelty and obviousness are used to judge patentability in a given instance; consequently, even were *Venner* otherwise applicable on its surface, it's pre-*Deere* context and decisional rationale render it clearly otherwise inapplicable. A second case, *In re Rundell*, 9 U.S.P.Q. 220 (C.C.P.A. 1931) is relied upon by the Examiner for the "well settled" notion that "it is not 'invention' to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same result." *Rundell* is inapplicable not merely because it applies a standard and rationale of review for "invention" that precedes *Deere* but also that precedes Title 35 of the United States Code including present day 35 U.S.C. 102 and 35 U.S.C. 103. By dipping freely into such a time frame, the Examiner might also just as well be rejecting the present application for having failed to demonstrate a flash of inventive genius. These cases have no application in the present setting.

elements of a claim (or claim set). Instead, those elements should be operable as disclosed or be otherwise suggested to meet the contextual inter-relationships as set forth by the claim or claims being examined. Narten's lack of disclosure in this regard renders Narten insufficient to render claim 5 obvious.

Claim 6 is dependent upon claim 5 and further stipulates that automatically determining when the router has not received a prefix advertisement from another router for the same active communication link includes automatically determining when the router has not received a prefix advertisement from another router for the same active communication link within a predetermined period of time. Again, the Examiner is relying upon a simplistic reference to an aspect of Narten (i.e., Narten's AdvReachableTime attribute) without reference to Narten's other teachings in this regard. In fact, Narten's teachings in this regard are insufficient to provide the recitations of Claim 6 in their entirety.

The applicant therefore respectfully submits that Claims 5 and 6 may be passed to allowance.

(9) The Claims

1. (Original) A method comprising:

at a router:

- identifying at least one active communication link to provide an identified active communication link;
- automatically identifying whether the router needs a new address prefix for the identified active communication link.

2. (Original) The method of claim 1 wherein identifying at least one active communication link includes identifying a plurality of active communication links to provide a plurality of identified active communication links.

3. (Original) The method of claim 2 wherein automatically identifying whether the router needs a new address prefix includes identifying whether the router needs a new address prefix for each of the plurality of identified active communication links.

4. (Original) The method of claim 1 wherein automatically identifying whether the router needs a new address prefix for the identified active communication link includes automatically determining whether the router needs to advertise a new address prefix for use by link endpoints.

5. (Original) The method of claim 1 wherein automatically determining whether the router needs a new address prefix includes automatically determining when the router has not received a prefix advertisement from another router for the same active communication link.

6. (Original) The method of claim 5 wherein automatically determining when the router has not received a prefix advertisement from another router for the same active communication link includes automatically determining when the router has not received a prefix advertisement from another router for the same active communication link within a predetermined period of time.

7. (Original) The method of claim 4 wherein automatically determining whether the router needs to advertise a new address prefix for use by link endpoints includes automatically determining whether the router needs to advertise an address prefix for use by link endpoints by soliciting at least one router to advertise.

8. (Original) A method to automatically support automatic configuration of a network router comprising:

at the network router:

- automatically assessing each router link to identify active communication links to provide identified active communication links;
- for each identified active communication link:
 - automatically identifying whether the router needs to support the identified active communication link;
 - for each identified active communication link that is identified as needing support, automatically identifying whether that identified active communication link requires at least one network address prefix.

9. (Original) The method of claim 8 wherein automatically identifying whether the router needs to support the identified active communication link includes automatically monitoring the identified active communication link for prefix advertisements from another router that is supporting communications for the identified active communication link.

10. (Original) The method of claim 9 wherein automatically identifying whether the router needs to support the identified active communication link includes automatically determining that the router needs to support the identified active communication link when no other router has transmitted a prefix advertisement for the monitored identified active communication link.

11. (Original) A router comprising:

- first means for automatically identifying at least one active communication link to provide an identified active communication link; and
- second means for automatically identifying when the router needs to provide a new address prefix for the identified active communication link.

12. (Original) The router of claim 11 wherein the first means is further for automatically identifying a plurality of active communication links to provide a plurality of identified active communication links.

13. (Original) The router of claim 11 wherein the second means is further for automatically identifying when the router needs to provide a new address prefix for each of the plurality of identified active communication links.

14. (Original) The router of claim 11 wherein the second means is further for automatically determining when the router needs to advertise a new address prefix for use by link endpoints.

15. (Original) The router of claim 11 wherein the second means is further for automatically determining when the router needs to advertise a new address prefix for use by at least one link endpoint by soliciting at least one other router to advertise.

Respectfully submitted,

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